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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,225	09/12/2003	Bernard Plessier	2110-49-3	8365

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EXAMINER

CHERY, MARDOCHEE

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/662,225	Applicant(s) PLESSIER ET AL.	
	Examiner Mardochee Chery	Art Unit 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This communication is responsive to Applicants' communication filed on July 28, 2006 in response to PTO Office action mailed on March 24, 2006. Applicants' remarks and/or amendment were considered with the following results.
2. No claims have been amended, added, or canceled. Claims 1-20 remain pending.
3. The rejection of claims 12-13 under 35 USC 112, first paragraph has been withdrawn due to the remarks filed on July 28, 2006.
4. However, Applicants failed to address the rejection of claims 1 and 4 under 35 USC 112, second paragraph. Such rejection is maintained and reiterated below.

### ***Response to Arguments***

5. Applicant's arguments filed July 28, 2006 have been fully considered but they are not persuasive.
  - a. Applicants argue on page 8, paragraph 2 of the remarks that "with the structure of Tomaiuolo, the sequential access to the contents of the memory locations is not provided via a predetermined one of the memory locations", as recited in claim 8.

Examiner respectfully disagrees with such contention and would like to point out that Tomaiuolo clearly discloses "...memory devices accessible sequentially wherein the access takes place by successive locations, that is the subsequent memory location to be read, and therefore its address is predictable (i.e. predetermined) from the address of the location being currently read (emphasis added)..." From the foregoing, it has been shown that Tomaiuolo anticipates the feature of "sequentially accessing memory locations via a predetermined one of the memory locations" of Applicants' invention.

- b. Applicants argue on page 9, paragraph 2 of the remarks that "Iadanza does not disclose a structure for data content of any memory element of the subarray being rotatable by shifts through the memory elements of the sub-array", recited in claim 1.

Examiner strongly disagrees. Iadanza clearly discloses at col. 8, ll 36-50; col. 10, ll 29-42; "...each memory sub-array comprises a plurality of memory cells arranged in an array of M rows and N columns; each row of memory cells may have an associated row of transfer cells for enabling movement of data vertically from word to word that enables shifting of data to or from memory cell... and as data is pushed into a given sub-array, overflow data is shifted out of the given memory sub-array and propagated to the next adjacent memory sub-array...". In view of the foregoing, the

claimed invention is not patentably distinct from ladanza's when interpreted in light of the specification.

- c. Applicants argue on page 9, paragraph 3 of the remarks that "there is no motivation to combine ladanza and the AAPA".

Examiner respectfully disagrees with such assumption. Additionally, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine ladanza and AAPA can be found on page 5 of the last Office action and I again replicated below.

- d. Therefore, the rejection of claims 1-20 is maintained and reiterated below for Applicants' convenience.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 8-10 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomaiuolo (2002/0087817).

As per claims 8 and 14-16, Tomaiuolo discloses a memory, comprising: a plurality of memory locations each having a contents [par. 006]; and a control circuit coupled to the memory locations and operable to, allow random access to the memory locations during a first mode of operation, and allow sequential access to the contents of the memory locations via a predetermined one of the memory locations during a second mode of operation [page 6, left column, par. 8].

As per claim 9 Tomaiuolo discloses the first mode of operation comprises a read mode and the second mode of operation comprises a write mode [par. 004].

As per claim 10 Tomaiuolo discloses the first mode of operation comprises a write mode; and the second mode of operation comprises a read mode [par. 015].

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iadanza (6,091,645) in view of Applicant Admitted Prior Art (hereinafter APA).

As per claim 1, Iadanza discloses a memory comprising: at least one array of memory elements [col. 2, ll 28-35]; a partition of the at least one array into a plurality of sub-arrays of the memory elements [Fig. 1A-1D]; an array configuration circuit for selectively putting the at least one array in one of two operating configurations, the two operating configurations including [col. 2, ll 20-27]; a sub-array selector, responsive to a first memory address, for selecting one among the at least two sub-arrays according to the first memory address, the sub-array selector enabling access to the selected sub-array [col. 2, ll 28-36]; and a memory element access circuit, responsive to a second memory address, for enabling access to a prescribed memory element in the selected sub-array after a prescribed number of shifts, depending on the second memory

address, of the data content of the memory elements in the selected sub-array, a data content of any memory element of the sub-array being rotatable by shifts through the memory elements of the sub-array [col. 8, ll 36-50; col. 10, ll 29-42].

However, landaza does not specifically teach a first operating configuration, in which the memory elements of the at least one array are coupled one to another to form a monodimensional sequentially-accessible memory, and a second operating configuration, in which the memory elements in each sub-array are coupled to one another so as to form an independent monodimensional sequentially-accessible memory block as required by the claim.

APA discloses a first operating configuration, in which the memory elements of the at least one array are coupled one to another to form a monodimensional sequentially-accessible memory, and a second operating configuration, in which the memory elements in each sub-array are coupled to one another so as to form an independent monodimensional sequentially-accessible memory block [pars. 6 and 7] to provide a memory that can be accessed sequentially in a first-in, first-out manner and a memory that can be accessed randomly (pars. 6-7).

Since the technology for implementing a memory array with a first operating configuration, in which the memory elements of the at least one array are coupled one to another to form a monodimensional sequentially-accessible memory, and a second



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operating configuration, in which the memory elements in each sub-array are coupled to one another so as to form an independent monodimensional sequentially-accessible memory block was well known as disclosed by APA, an artisan would have been motivated to implement this feature in the system of ladanza in order to have a memory that can be accessed sequentially in a first-in, first-out manner and a memory that can be accessed randomly. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to modify the system of ladanza to include a first operating configuration, in which the memory elements of the at least one array are coupled one to another to form a monodimensional sequentially-accessible memory, and a second operating configuration, in which the memory elements in each sub-array are coupled to one another so as to form an independent monodimensional sequentially-accessible memory block since this would have provided a memory that can be accessed sequentially in a first-in, first-out manner and a memory that can be accessed randomly (pars. 6-7) as taught by APA.

As per claim 2, ladanza discloses said array configuration circuit includes, for each sub-array of memory elements, an input selector associated with a first memory element of the sub-array, for selectively feeding the first memory element with either an output of a last memory element in an adjacent previous sub-array, in the first operating configuration, or an output of a last memory element of the sub-array, in the second operating configuration [col. 2, ll 52-65; col. 5, ll 66 to col. 6, ll 12].

As per claim 3, Iadanza discloses the first operating configuration is a data storage configuration, in which the memory is put when data are to be stored therein, and the second operating configuration is a data retrieval configuration, in which the memory is put when data are to be retrieved therefrom [col. 1, ll 62 to col. 2, ll 4; col. 2, ll 28-36].

As per claim 4, Iadanza discloses in the second operating configuration each sub-array provides a respective output data, the sub-array selector selecting one sub-array output data out of the at least two output data provided by the at least two sub-arrays, according to the first address [col. 2, ll 28-36].

As per claim 5, Iadanza discloses said memory element access circuit enables a transfer of the output data of the selected sub-array to a memory output after a prescribed number of shifts of the data content of the memory elements in the selected sub-array [col. 8, ll 36-50; col. 10, ll 29-42].

As per claim 6, Iadanza discloses said memory element access circuit includes a counter for counting the number of data content shifts, and a coincidence detector detecting coincidence between a counter value and a value representative of the second address, the coincidence detector enabling the transfer of the output data of the selected sub-array to the memory output when the counter value equals the value representative of the second address [col. 2, ll 36-44; col. 10, ll 10-28; col. 35, ll 34-51;

col. 33, ll 25-34].

As per claim 7, Iadanza discloses each memory element includes at least one flip-flop [col. 28, ll 42-52].

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomaiuolo (2002/0087817) in view of APA.

As per claim 11 Tomaiuolo discloses a memory, comprising: an array of memory locations [par. 005-006]; and a control circuit coupled to the array and operable to cause the array to operate as a random-access memory during a first mode of operation [page 6, left column, par. 8].

However, Tomaiuolo does not specifically teach a first-in-first-out memory during a second mode of operation as required by the claim.

APA discloses a first-in-first-out memory during a second mode of operation [Par. 006] to provide a memory that can be accessed sequentially in a first-in, first-out manner (pars. 6-7).

Since the technology for implementing a memory with a first-in-first-out memory during a second mode of operation was well known as disclosed by APA, an artisan would have been motivated to implement this feature in the system of Tomaiuolo in

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order to have a memory that can be accessed sequentially in a first-in, first-out manner. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to modify the system of Tomaiuolo to include a first-in-first-out memory during a second mode of operation since this would have provided a memory that can be accessed sequentially in a first-in, first-out manner (pars. 6-7) as taught by APA.

11. Claims 12-13 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomaiuolo (2002/0087817) in view of APA and further in view of Iadanza (6,091,645).

As per claims 12 and 13 Tomaiuolo discloses the memory locations comprise a ring of serially coupled memory locations each having a respective contents [page 6, left column, par. 8].

However, Tomaiuolo and APA do not specifically teach during the first mode of operation, the control circuit is operable to, receive a clock signal, shifting the contents of each respective memory location in the ring to a respective next memory location in the ring once per cycle of the clock signal, and allow access to a predetermined one of the memory locations during a predetermined cycle of the clock signal.

Iadanza discloses during the first mode of operation, the control circuit is operable to, receive a clock signal, shifting the contents of each respective memory location in the ring to a respective next memory location in the ring once per cycle of the clock signal, and allow access to a predetermined one of the memory locations during a predetermined cycle of the clock signal [col. 8, ll 36-50; col. 10, ll 29-42; col. 11, ll 28-35; col. 35, ll 52-59] to provide serial scan shifting of data for driving each of the memory cells (col. 11, ll 30-35).

Since the technology for implementing a memory with shifting the contents of each respective memory location in the ring to a respective next memory location in the ring once per cycle of the clock signal, and allow access to a predetermined one of the memory locations during a predetermined cycle of the clock signal was well known as evidenced by Iadanza, an artisan would have been motivated to implement this feature in the system of Tomaiuolo and APA in order to provide serial scan shifting of data for driving each of the memory cells. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to modify the system of Tomaiuolo and APA to include shifting the contents of each respective memory location in the ring to a respective next memory location in the ring once per cycle of the clock signal since this would have provided serial scan shifting of data for driving each of the memory cells (col. 11, ll 30-35) as taught by Iadanza.

As per claims 17-20, the rationale in the rejection of claim 12 is herein incorporated.

***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. When responding to the office action, Applicant is advised to clearly point out the patentable novelty that he or she thinks the claims present in view of the state of the art disclosed by references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c).

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mardochee Chery whose telephone number is (571) 272-4246. The examiner can normally be reached on 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manonama Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 16, 2006



Mardochee Chery  
Examiner  
AU 2188



10/16/06

MANO PADMANABHAN  
SUPERVISORY PATENT EXAMINER